

Work Order ID 134345

Wednesday, July 08, 2015 3:10:22 PM

134345

Page 1

Item ID: D4857-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Wiper Deflector Assembly
 Start Date: 7/10/15 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 7/10/15 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: MCS Date: JUL 09 2015 Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
 Run Start ***NR1***
 Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4857	REV F

110		0.00							
110									
Small Fab	Memo	0.00							
Small Fab	Drill holes for D4857-1 as per dwg using DT10028								

120	QC5- Inspect part completeness to step on W/O	0.00							
120									
QC	Memo	0.00							
Quality Control									

130		0.00							
130									
HandFinish	Memo	0.00							
Hand Finishing	Touch up holes with primer as per dwg								
	A/R PRIMER BATCH: _____								

N/A
 TS-7-21

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 134345

134345

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Wednesday, July 08, 2015 3:10:22 PM

Item ID: D4857-041 Accept *N900040100* Setup Start *NS1*

Revision ID: Stop *NS2*

Item Name: Wiper Deflector Assembly

Start Date: 7/10/15 Start Qty: 4.00 *4* Cust Item ID:

Required Date: 7/10/15 Req'd Qty: 4.00 *4* Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*

QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC14- Inspect Spray Paint	0.00							
140									
QC	Memo	0.00							
Quality Control									
150		0.00							
150									
Small Fab	Memo	0.00							
Small Fab	BOND GASKET AS PER DWG USING DOW CORNING 736 ADHESIVE BATCH: M 131824								
160	QC5- Inspect part completeness to step on W/O	0.00							
160									
QC	Memo	0.00							
Quality Control									

N/A
HDS 721

FF 4

JUL 15 2015

④ 1502-20 RD

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
Root Cause				FAULT CATEGORY																					
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐															
OTHER :																									

Work Order ID 134345***134345***

Page 3

Wednesday, July 08, 2015 3:10:22 PM

Item ID: D4857-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Wiper Deflector Assembly
Start Date: 7/10/15 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 7/10/15 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	Identify as per dwg & Stock Location <i>pk</i>	0.00							
170									
Packaging	Memo	0.00							
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.00							
Quality Control									

DAE
9-59
JUL 2 1 2015
MLJ
JUL 2 1 2015
Shaw 015/7/21
MLJ
JUL 2 1 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

Picklist Print

Wednesday, July 08, 2015 3:10:22 PM

Page 1

Work Order ID: 134345

134345

Parent Item: D4857-041

D4857-041

Parent Item Name: Wiper Deflector Assembly

Start Date: 7/10/15

Required Date: 7/10/15

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A NEW ISSUE 13-07-17 JLM VERIFIED BY:DD IPP
REV:B AS PER REV F JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4857-1 *D4857-1* WiperDeflector		Manufactured	No				Each	0.0000	**	4 (4)		DAS 30 9-89	JUL 14 2015
D4944-1 *D4944-1* Gasket		Manufactured	No				Each	0.0000	**	8 (8)		DAS 30 9-89	JUL 14 2015

DQA: _____ Date: _____



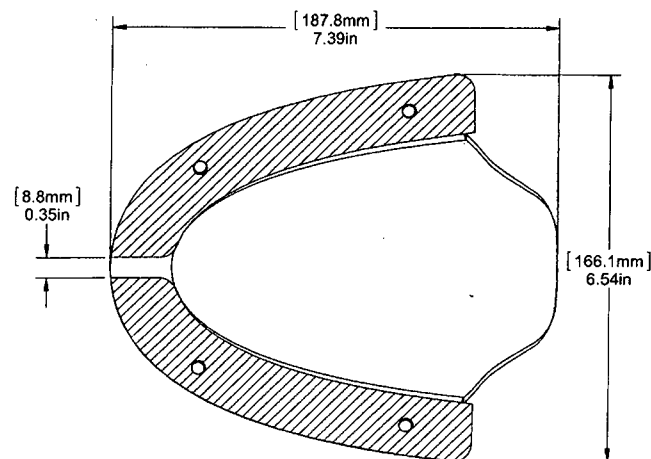
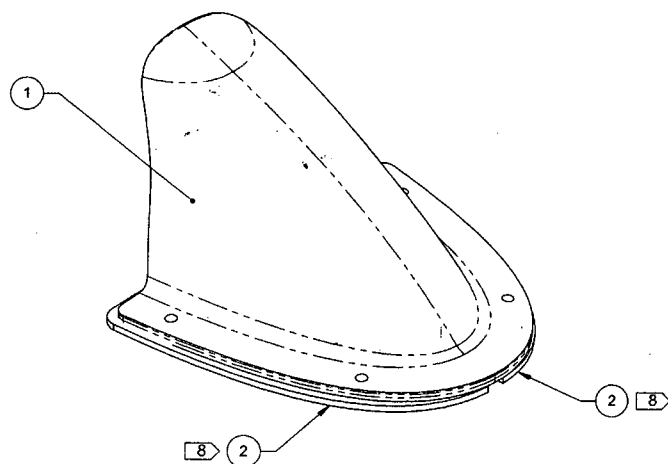
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
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			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

ITEM	QTY	P/N	DESCRIPTION
	X	D4857-041	WIPER DEFLECTOR ASSY
1	1	D4857-1	WIPER DEFLECTOR
2	2	D4944-1	GASKET



D4857-041 WIPER DEFLECTOR ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-041, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D4944-1 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

RELEASED

2015 JUN 08

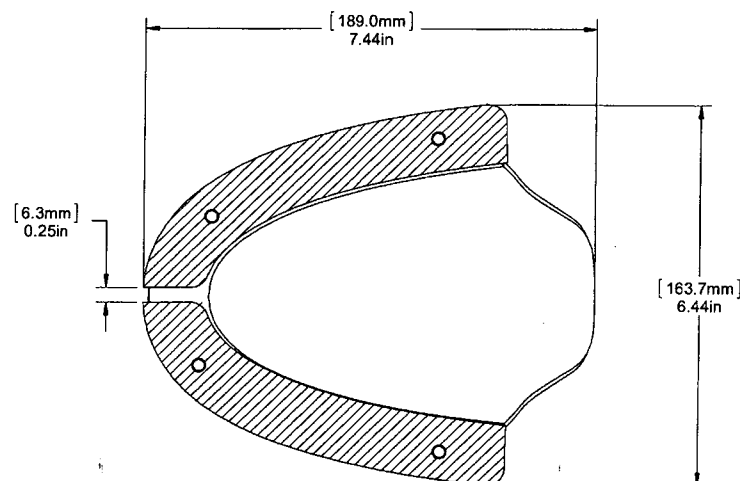
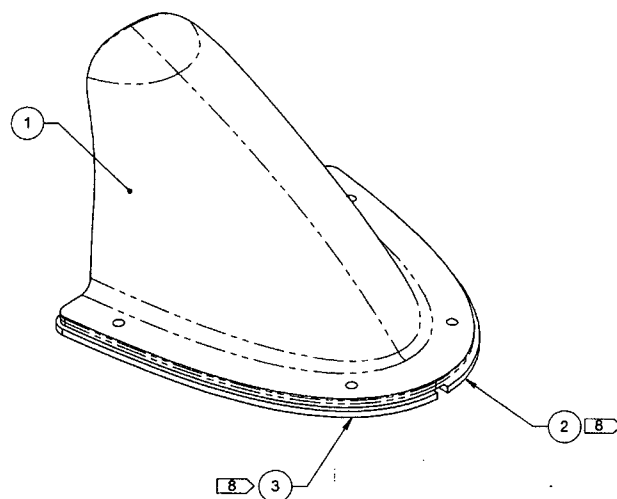
ECN 15-582

F	SHT 1 ADDED -041, ADDED D4857-2M (SHEET 8) AND RELABELED D4857-M TO D4857-1M (ZN B5-7). UPDATED D4757-044 (ZN B5-3). REVISED NOTES 1, 8 AND 10 (ZN A8-4, ZN A8-5, ZN A8-6, ZN A8-7, ZN A8-8). UPDATE PART WEIGHTS	AK / AJS	15.06.03
E	REVISE NOTE 6) (ZN A8-1, A8-2, A8-3); AND NOTE 8) (ZN A8-1, A8-2, A8-3)	AK	14.06.05
D	ADDED D4857-043 (ZN C7-1), D4857-044 (ZN C7-2), D4857-3 (ZN C7-4), D4857-4 (ZN C7-5) AND D4857-M (ZN C7-6)	AK	14.05.13
C	ADDED 4 MOUNTING HOLES	DW	13.12.09
B	REVISED BOM, DRAWING VIEWS, NOTES	PB	13.08.13
A	NEW RELEASE	DB	13.05.23
REV.	DESCRIPTION	BY	DATE

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 1 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
DATE	15.06.03	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

ITEM	QTY -043	P/N	DESCRIPTION
	X	D4857-043	WIPER DEFLECTOR ASSEMBLY, LH
1	1	D4857-3	WIPER DEFLECTOR LH
2	1	D5117-1	GASKET
3	1	D5117-3	GASKET



D4857-043 WIPER DEFLECTOR ASSEMBLY, LH

RELEASED

2015 JUN 08

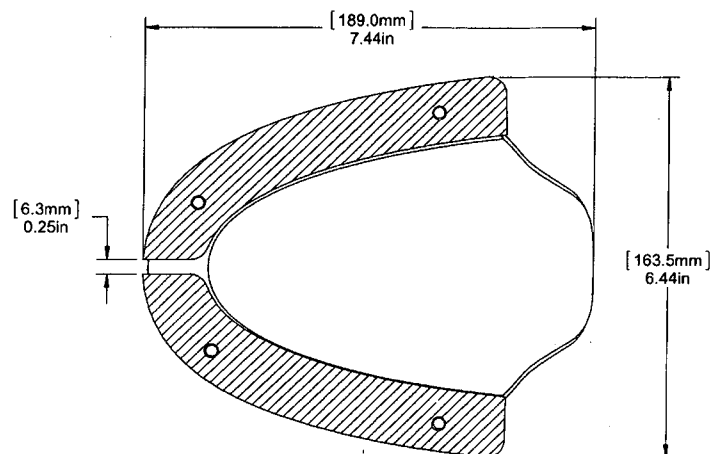
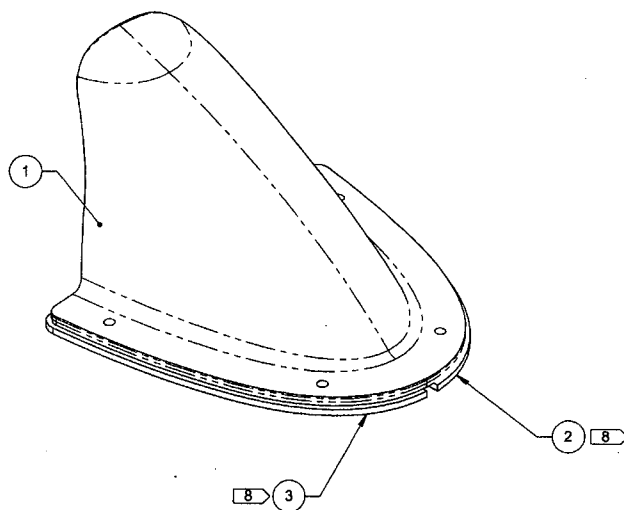
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-043, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D5117-1/-3 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

APPROVED

DESIGN		DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 2 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
DATE	15.06.03	COPYRIGHT © 2013 BY DART AEROSPACE LTD	
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ITEM	QTY -044	P/N	DESCRIPTION
	X	D4857-044	WIPER DEFLECTOR ASSEMBLY, RH
1	1	D4857-4	WIPER DEFLECTOR
2	1	D5117-5	GASKET
3	1	D5117-7	GASKET



D4857-044 WIPER DEFLECTOR ASSEMBLY, RH

NOTES:

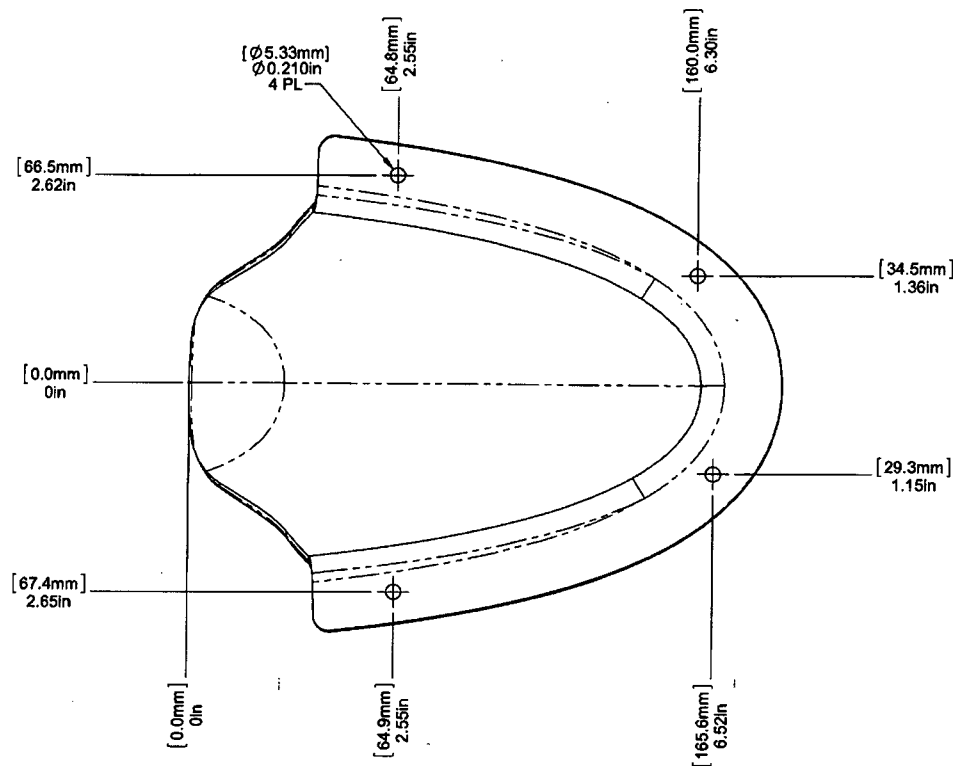
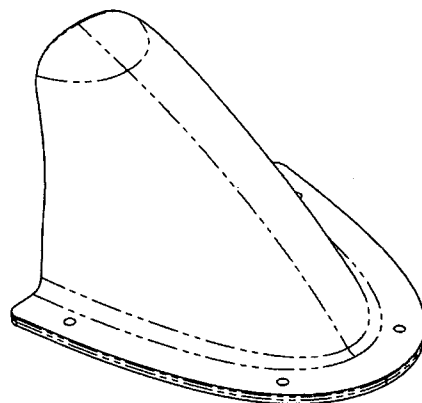
- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-044, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D5117-5/-7 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 3 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
DATE	15.06.03	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

RELEASED

2015 JUN 08



D4857-4 WIPER DEFLECTOR, RH

RELEASED

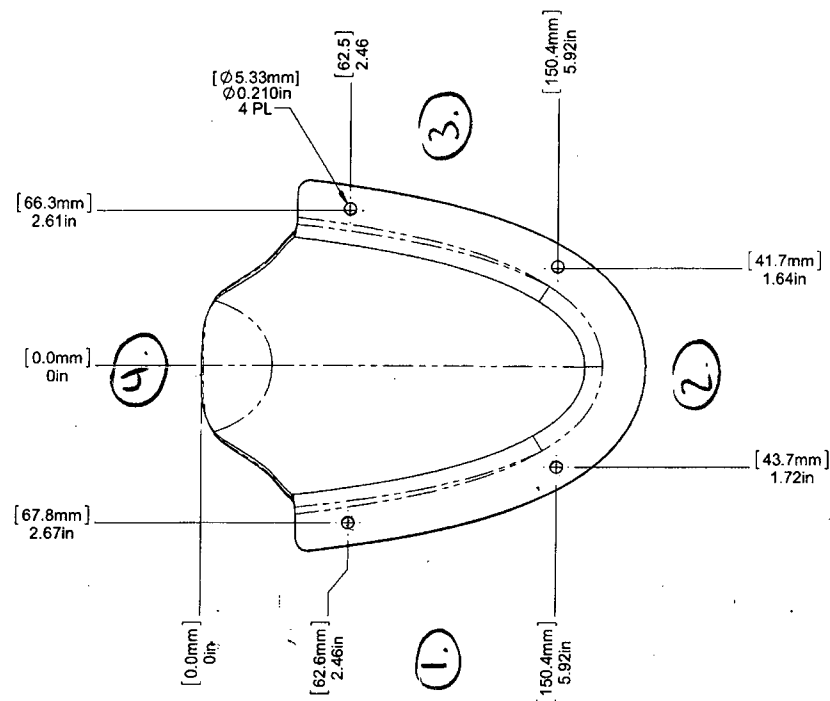
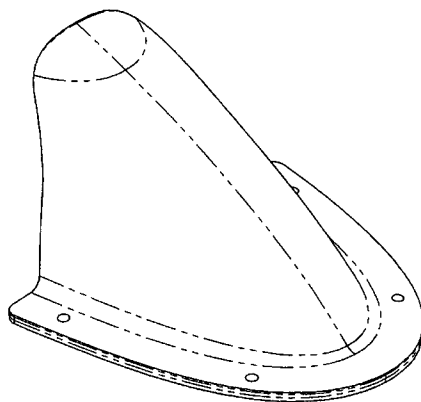
2015 JUN 08

NOTES:

- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-4-F.IGES

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 6 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
DATE	15.06.03	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D4857-1 WIPER DEFLECTOR

RELEASED

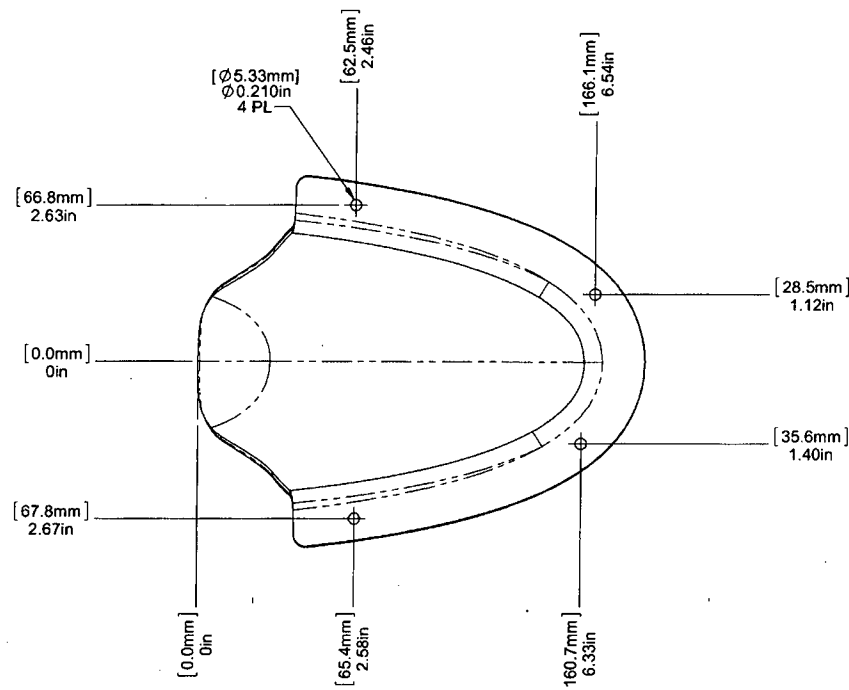
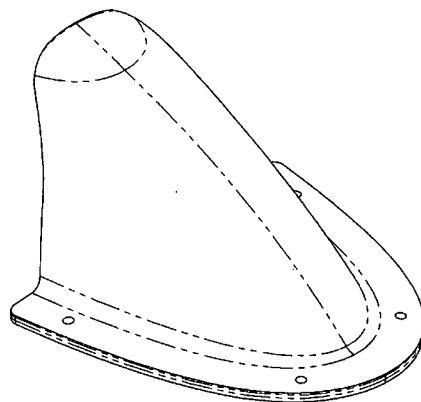
2015 JUN 08

NOTES:

- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-1-F.IGES

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 4 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
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D4857-3 WIPER DEFLECTOR, LH

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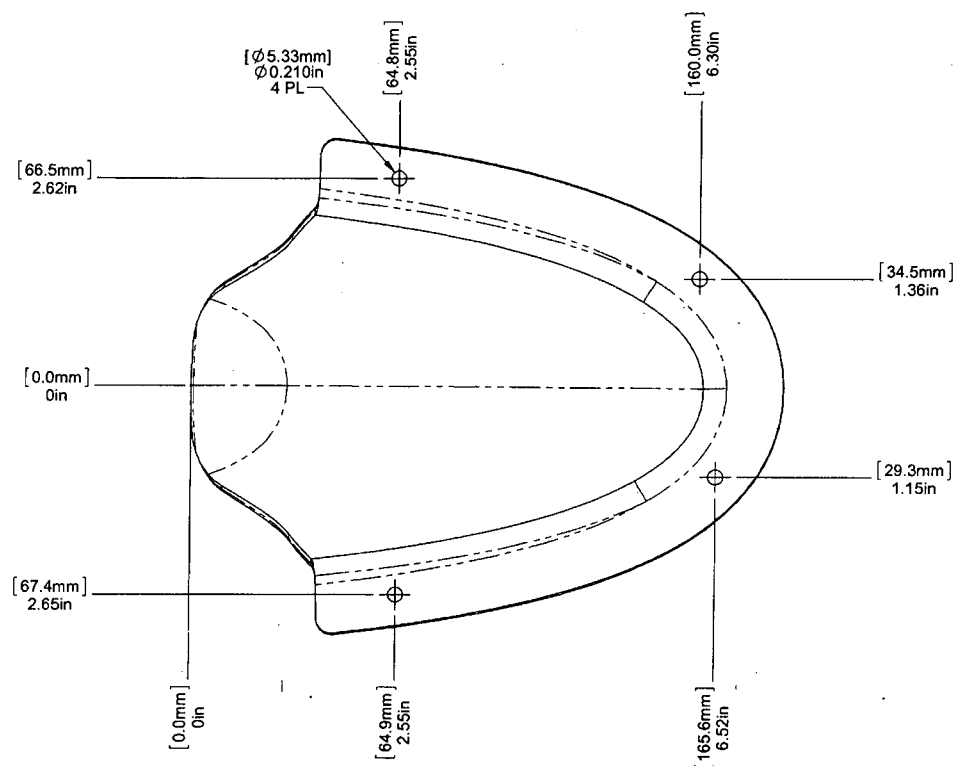
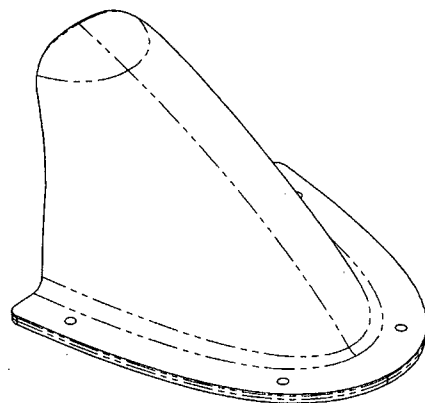
NOTES:

- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-3-F.IGES



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DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.	DD	D4857	SHEET 5 OF 8
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D4857-4 WIPER DEFLECTOR, RH

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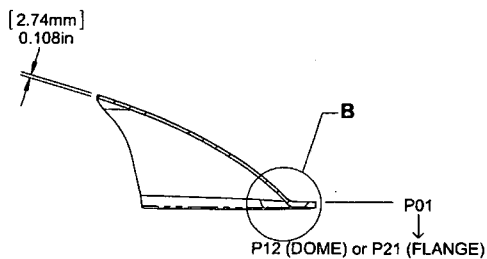
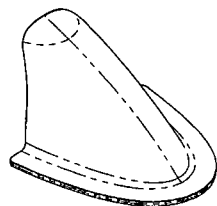
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NOTES:

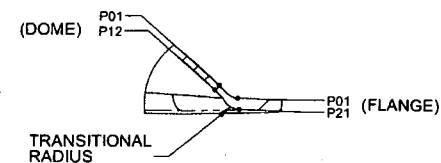
- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-4-F.IGES

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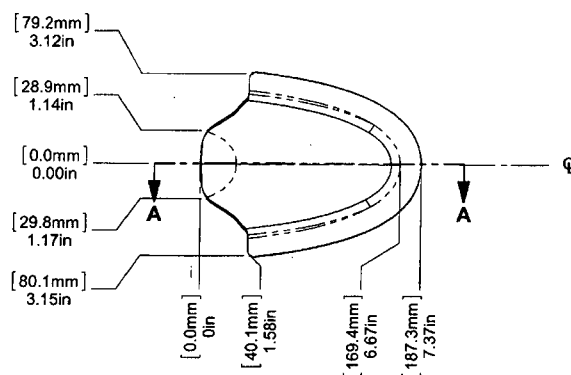
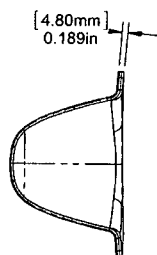
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 6 OF 8
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SECTION A-A



DETAIL B



D4857-M WIPER DEFLECTOR

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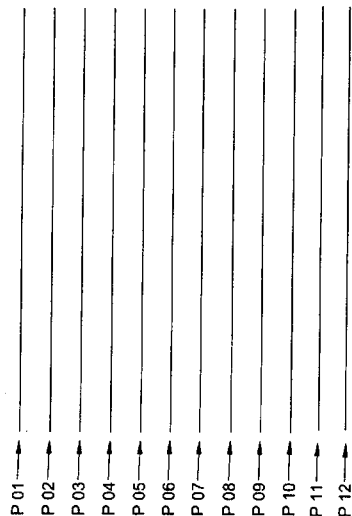
2015 JUN 08

NOTES:

- 1) MATERIAL: KEVLAR #285/353 4H SATIN, EPOXY PREPREG, 250°F CURE, 40% R/C
- 2) MATERIAL: CARBON FIBER PREPREG, ALDILA PREPREG SYSTEM 3K2X2-FR250-204/40 T300,
- 3) MATERIAL: ALDILA #120 E-GLASS AR250 WITH 48% RC;
- 4) FINISH: PRIMER IAW MIL-P-85582, 2-7 MIL MAX.
- 5) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 7) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 8) IDENTIFICATION: N/A
- 9) WEIGHT: 0.35 lbs (0.16 kg)
- 10) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-M-F.IGES
- 11) SEE SHEET 8 FOR LAYUP SCHEDULE. MANUFACTURE IAW MPP 145. CURE 250°F FOR 4 HOURS.

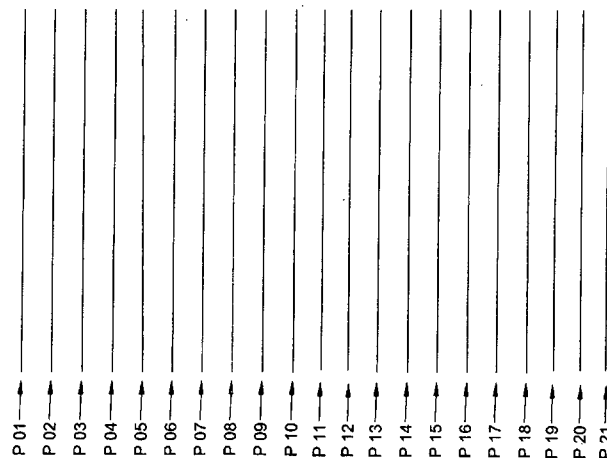
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CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 7 OF 8
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LAYUP OF LAYERS (DOME)

LAMINATE - .108in (12 LAYERS)			
PLY	WARP ANGLE	MATERIAL	THICKNESS
01	90	[1]	.008-.010
02	0	[1]	.008-.010
03	90	[2]	.008-.010
04	0	[2]	.008-.010
05	90	[2]	.008-.010
06	0	[2]	.008-.010
07	90	[2]	.008-.010
08	0	[2]	.008-.010
09	90	[2]	.008-.010
10	0	[2]	.008-.010
11	90	[2]	.008-.010
12	0	[2]	.008-.010



LAYUP OF LAYERS (FLANGE)

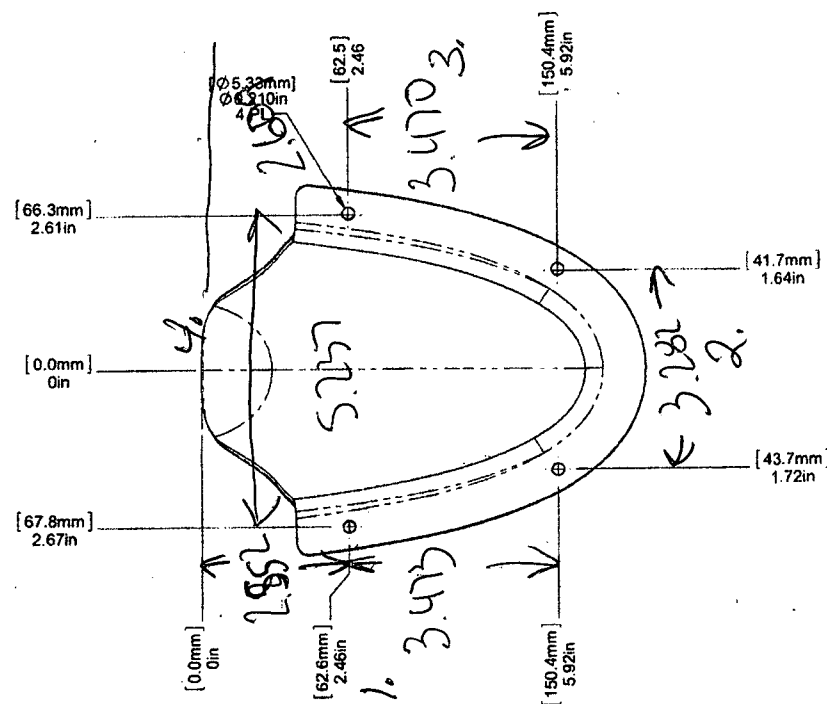
LAMINATE - .189in (21 LAYERS)			
PLY	WARP ANGLE	MATERIAL	THICKNESS
01	90	[1]	.008-.010
02	0	[1]	.008-.010
03	90	[2]	.008-.010
04	0	[2]	.008-.010
05	90	[2]	.008-.010
06	0	[2]	.008-.010
07	90	[2]	.008-.010
08	0	[2]	.008-.010
09	90	[2]	.008-.010
10	0	[2]	.008-.010
11	90	[2]	.008-.010
12	0	[2]	.008-.010
13	90	[2]	.008-.010
14	0	[2]	.008-.010
15	90	[2]	.008-.010
16	0	[2]	.008-.010
17	90	[2]	.008-.010
18	0	[2]	.008-.010
19	90	[2]	.008-.010
20	0	[2]	.008-.010
21	90	[3]	.005

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DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 8 OF 8
APPROVED	WM	TITLE	SCALE
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NOTES:
1) MATERIAL: MADE FROM D4857-M

2) FINISH: N/A

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

1) UNITS: INCHES UNLESS OTHERWISE NOTED. ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.

4) UNITS: INCHES UNLESS OTHERWISE NOTE
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

5) BREAK SHARP EDGE
6) IDENTIFICATION: N/A

6) IDENTIFICATION: N/A

8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-1-F.IGES

DESIGN	DW	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 4 OF 4
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